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NOTICE TO SUBSCRIBERS.

All those who are in arrears for the Tennessee Farmer, are requested to make payment by the 1st of December next. The advance price will be received if payment be made by that time. From those who fail to pay by the time mentioned $1.50 will invariably be demanded. In places where there is no agent, the Post Masters will generally remit the amount if requested.

THOMAS B. EMMERSON,
Ex'r Thomas Emmerson, dec.

SAVING SEED.—This is the season when the farmer and gardener should be busy in selecting choice seed. We will recommend to the farmers to adopt the following course in regard to seed corn. Go through your corn fields and gather those stalks *only* which have *ripened early*, and which bear the *greatest number* of *good ears*.

If enough cannot be found bearing three ears (for next spring's planting) supply the deficiency from stalks bearing two ears. Let these ears be carefully saved, and in the spring, rejecting the grains on the small end of the cob, plant your crop with the balance. The following year you will find a number of stalks bearing four ears, from which you should select your seed for the next year.

By pursuing this course for a few years you will find yourself in possession of a very early and very prolific kind of corn, which you can sell to your more careless neighbors for seed, at three or four times the ordinary selling price.

☞ We are much gratified, indeed, to see the interest which is felt for the circulation of the Farmer. Our subscription list has been rapidly increasing for months past, for which we return our sincere thanks, and will be grateful to our friends for a continuation of their efforts.

We thank our esteemed correspondent "Arator" for his valuable communication, and hope he will favor the readers of the Farmer with many more of his experiments and opinions.

AGRICULTUTAL PUBLICATION.—The "Franklin Farmer," devoted to agricultural, manufacturing and commercial interests of the country generally, has just been commenced at Frankfort, Ky., by *Franklin D. Petitt*; 8 pages quarto weekly, at $2 in advance. The first No. of the "Farmer" we have before us. From the neat typographical appearance, and the useful matter it contains, it bids fair to be a useful vehicle of information to its readers. The enterprising Kentuckians need such a work; they can and surely will support it.

From the Yankee Farmer.

MARL.

We have been requested to give information so that farmers may know marl and its effects and how to apply it to the soil. We publish an article on this subject, commencing on the first page of this paper.

A writer in the present volume of the Yankee Farmer, page 195, wishes to know how he may know marl if he should find it—when and how it may be found—what it looks like—feels like, smells like, tastes like, &c.?

Marl is often found in flat lands where water stands. Sometimes by the side of rivers, under sand banks. It looks something like fine clay, but is usually of a lighter color. It has a greasy feel similar to clay, but it is not tenacious and cannot be made into mortar, as it crumbles like chalk. It has no smell of itself, but it may imbibe an odor from some vegetable or mineral substance. When dry it tastes much like chalk. Marl is an excellent manure and it can doubtless be found in many parts of the country where it is not now known. Farmers, attend to this subject, many of you have upon your own farms substances with which you may enrich them and add greatly to your income. We have seen in many parts of the country, particularly when sand hills have been dug down in making woods, a clayey substance resembling marl, that may be easily pulverised when dry, which would be a good manure to apply to sandy soils that usually abound in the vicinity.

From the British Farmers' Magazine.

MANUFACTURE OF BEET-ROOT SUGAR.

[We invite the particular attention of our readers to the following article on the subject of beet-root sugar. We have read it with much satisfaction, and find in it a full, plain and explicit account of the whole process required for its manufacture. Great interest, we believe, is now felt in this country, (and even in our neighborhood) in regard to this branch of industry; and as it is the latest, we suppose it contains the best improvements on this subject.—It was compiled from the works of M. Dubrunfaut and others, by Samuel Taylor, Jr. Our sheet is small, but we are desirous our subscribers, and especially those who are at all anxious to commence this business, shall have the reading of all those subjects which contain useful matter as we believe this does. There are a few articles on the above subject, in our former numbers, but too concise to afford that full information necessary for the manufacturing of sugar from this most valuable root.

In laying the following subject before our readers, we feel sensible that it was in accordance with the deceased Editor's judgment and most ardent wishes.—Ed. Ten. Far.]

Introduction.

We will now proceed to notice the methods by which the greatest quantity, and the best quality, of sugar can be obtained from beet root.

Sugar is a component part of this root, and that method of extricating it is to be preferred, which destroys the least portion of it in the course of the operation; for in the present state of the art, it is undeniable that a certain quantity is destroyed.

Most of the beet sugar manufacturers refine their own sugar; a method not approved of by the author. The art of refining is very complex and difficult to manage, and requires a long and intimate acquaintance with practical chemistry. The agricultural manufacturer, therefore, should confine his attention to the making of raw sugar, only, and that of as good quality as possible, to sell to the refiner. It is only when the making of brown sugar is finished, that refining can begin. Consider then, the time which must elapse before a manufacturer can realize any profit upon his business; for it will be remembered that the process of refining lasts for six or seven months, or the whole of the season of vegetation. From the moment therefore, that he sows his field he is but then finishing the manufacture of the preceding crop into brown sugar. Then comes the refining, which does not terminate till six months after; so that he has to wait fourteen or fifteen months before he can begin to sell his sugar, and probably eighteen months before the whole is sold. Add to this a credit of three or four months usually given to the buyers, and it will form a total of twenty-two months, or thereabouts, before he can expect to make his returns; whereas, if he sells the raw sugar, he will be able to begin to sell in seven or eight months after seed-time, and will have sold the whole in a year after the same seed-time.

Those manufacturers would be more at their ease, as to capital, who would first use a part of their own crops in their manufactory, and would afterwards treat with the little farmers for what they could spare of *their* produce. Thus, those who have not the means of forming an establishment of their own, will yet participate in some of the advantages of beet culture, the pulp of which they can re-purchase of the manufacturers.

I shall next proceed to describe the several operations connected with the manufacturing department, according to the order in which they follow each other.

CHAP. I.

Cleaning the Beet Roots.

When the roots are to be washed, it is not necessary that so much pains should be taken in scraping and cleaning them by hand; but when it is not intended to wash them, the cleaning ought to be particularly attended to. This work is mostly performed by women and children. They are furnished with a sharp knife, two or three inches broad and about ten inches long, with a suitable handle; and thus provided, they seat themselves near the heap of roots to be cleaned, and scrape each root separately, taking especial care not to leave any stones or dirt adhering to its surface. When a root is thought to be too large to enter the rasp properly, it should be cut in two or four pieces by the cleaner, according to its size. This should be done lengthways of the root.

The cleaning should take place in some spot convenient for the rasping mill and presses, and should be large enough to hold a quantity of roots sufficient to supply the manufactory for at least four or five days, and yet leave sufficient room for the cleaners to work in with comfort. After cleaning, the roots are thrown into a small open basket with ears, (like our turnip skeps.) They are then carried by the women to the rasp, where they leave the full

baskets and bring back empty ones. Two women well used to the work will clean and carry to the rasp, three or three and half tons of roots in twelve hours.

The cleaning, of course, diminishes, in some measure, the weight: perhaps about 6 or 7 per cent. on the gross weight of the roots.

CHAP. II.

Washing the Roots.

Washing is not indispensable where proper pains have been taken by the cleaners; neither can it be done in every situation, the quantity of water required being so considerable. A stream of water contiguous to a sugar manufactory would be an important advantage. In general, however, the washing is attended with many difficulties, particularly those arising from frost, which not unfrequently puts a stop to it entirely; and some are disposed to think that it may be dispensed with altogether, by spending a little more time and money about the previous cleaning, and especially by using a large rough brush, after the scraping knife; but this latter has not yet been tried.

It is important that the vulgar prejudice in favor of washing, and even the idea that a large quantity of water is required in the manufactory of beet sugar, should be done away with. The manufacturers may rest assured that the want of water need not be an obstacle to an establishment in any case; and that the quantity absolutely necessary to carry it on is very small indeed.

CHAP. III.

Rasping the Roots.

When M. Achard first attempted to make sugar from the beet root, he began by drying the roots by steam, then reducing them to paste by a mechanical process, and finally extracting the juice by pressure. It appears that the plan did not succeed, for he abandoned it. In fact, it is not that the sugar undergoes alteration from this drying or baking the roots, but that the pulp resulting from the drying process is so finely divided and slippery, as to render it extremely difficult to separate the juice from it. After many ineffectual attempts, M. Achard at last resorted to the method of rasping raw.

The texture of the beet root is so firm and compact, especially the better varieties, that mere pressure will extract but a small proportion of its juices, which appear to be enclosed in a number of little cells, and it is necessary to break these by rasping, in order to set the juices at liberty.

Other circumstances being equal, the best and most minutely divided roots will yield the greatest quantity of juice with the least pressure; and this constitutes the perfection of rasping.

1. *Rasping machines.*

There are rasping mills of various kinds, but that invented by M. Molard has been considered one of the best in use. The principle is that of a cast-iron cylinder, set round with jagged, saw-like blades, by means of which the roots are cut torn, and squeezed, till they part with as much of their juice as is possible. It will rasp about three and half tons of beets in an hour. Price charged by M. Molard on delivery, 1000 francs, (£41 13*s.* 4*d.*) The cylinder alone is worth half this sum, therefore an extra cylinder will add so much more to the cost of the machine.

2. *Operation of Rasping.*

Two laborers are required to work M. Molard's rasp, or sometimes it is worked by one man and two children.

Of all the operations connected with sugar making, the rasping demands the greatest expedition. As little as possible should be rasped beforehand, because the pulp speedily alters by exposure to the air. In fact, this alteration shows itself in a quarter of an hour, or, at most half an hour after rasping. This operation, therefore, should only keep pace with that of the press, and not be much in advance of it.

The rasp should be washed at least once a day, and kept as free from dirt as possible, all particles of juice, or pulp, being but the elements of fermentation.

3. *Power for working a Rasp Mill.*

The rasp ought not to be worked by hands, on account of the expense. Horses or oxen are far cheaper, and more powerful agents, but better than these are wind or water powers. The last is decidedly the best, wherever a sufficient fall can be obtained. Of the two first mentioned, the author gives the preference to oxen, as working equally well, and requiring far less costly keep than horses, the pulp from the mill being generally all that is required to keep them —a description of food which horses will not touch.

M. Dubrunfaut is inclined to prefer a wind power, as being a more practical and general agent than either water or steam, the former being rarely to be met with in level agricultural districts, and the latter very expensive, except in the immediate vicinity of coal. The society for the encouragement of national industry, aware of the importance of this power, offered a premium of 4000 francs (£166) for the best mill, which premium was awarded to M. de Lamolere. It is intended to be placed on some one of the farm buildings. Cost only 2,400 francs, (£100;) horses or oxen may be attached to it in the ab-

sence of wind. This provision is absolutely necessary in a beet root sugar manufactory. A pair of stones may also be added, by means of which the family may be supplied with meal and flour. The only inconvenience attending a wind power is its inequality. This has sometimes been complained of by the raspers.

CHAP. IV.

§1. *Extraction of the Sugar.*

The extraction of sugar from the pulp is only to be performed by pressure; and the more powerful this is, the more the juice from a given quantity of pulp. However, it is impossible, do what one will, to get it all out; for, even after the greatest pressure, the pulp will still continue moist.

In this operation, as in many others of a like nature, the last particles of matter become so difficult to obtain, as to render it more economical to neglect them altogether. Thus, in pressing the pulp of the beet root, the first juice runs out of itself from the bags, and continues to flow abundantly under the slightest efforts of the press, which the first always are; the quantity then decreases, perhaps in the inverse ratio of the square of the pressure. The remark may appear puerile, but it is highly important, as we shall soon see.

Suppose, for example, that with a known power, a certain quantity of juice is expressed in a given time from a mass of pulp. Suppose, in order to give the press the maximum of effect of which it is capable, that three men are employed for one hour, and that by this means 70 per cent. of syrup from the juice is obtained; it is probable enough, that by applying double the pressure after this, not more than 10 per cent. in addition will be obtained. It then becomes a question whether the quantity thus obtained be worth the cost of producing it.

Mr. Caffer employs a hydraulic press of the power of ten tons, on a surface of about 74 square inches. This was charged in the presence of the author, and from the pulp about 70 per cent. of juice was obtained at the first operation. The power was then doubled, but not more than 8 per cent of juice was the result, which, as before observed, hardly paid for the labor of producing it. However, on this point much depends on the nature of the power used, for it is obvious that wind, water, steam, or even horses and oxen, are less expensive than hand labor, now so commonly resorted to.

It may be imagined that an increase of power in this department would fully answer the required end; but, as has been said before, it is to the rasp that we must look for obtaining the greatest results from the press.

All roots do not give out the same quantity of juice from similar rasping and pressing.—Those which are richest in sugar give far less of it than those of a more watery formation. The operations of extraction being the same, it is only the different proportions of water which influence the quantity of juice afforded by the roots; and as the richness of the juice is ascertained in a manner sufficiently exact by the areometer, we may, by the help of this instrument, pretty nearly determine the quantity of roots which must be rasped to obtain a given body of juice.

Thus, with a good rasp and a powerful press, the following quantities of juice may be obtained proportionably to their areometrical densities:—

A	5°	80 per cent.
A	6°	75 "
A	7°	70 "
A	8°	66 "
A	9°	63 "
A	10°	60 "

Supposing that the experiment be tried on twenty-five hectolitres (88 English cubic feet) of juice, weiging 6° by the areometer, it would be necessary to rasp and press 3 1-4 tons of roots; at 7°, 3 1-2 tons; at 8°, 3 3-4 tons; and so on in proportion.

It is important that the operation of pressing should be done quickly; for as little delay as possible should take place between the rasping and pressing; as also between these and the defecation.

§1. *Of Presses.*

A variety of presses have been mentioned as applicable to the manufacture of beet root sugar, as the screw, the lever, the wedge, the cylinder, and the hydraulic. Of these the last is decidedly the best, as extracting at one operation all the juice that the pulp is capable of affording.

2. *The accompaniments of a Press.*

These accompaniments are the following:

1st. The bags which contain the pulp.

2d. Osier hurdles.

3d. A flat reservoir for preparing the bags in.

4th. A cistern for the juice, with pipes, pump, &c.

1. *The Pulp Bags*

These bags should be made of strong materials; Russia canvass, for instance. The texture should not be too close, so as to injure the juice from escaping, or they will be in danger of bursting; neither should they be too coarse, or the pulp will squeeze through the meshes. This last inconvenience is, however, of less import

ance, and of less frequent occurrence than the other.

The size of the bags ought to be regulated by the power of the press; observing always that the surface pressed should never extend beyond the edges of the press itself.

As to the number of bags, that must, of course, depend on the number of working presses, their size, and the charge of pulp which each bag is made to hold. Thus, suppose a press of which the height of the pressing space is three feet three inches, and that each bag shall be so filled, as, with the hurdle, to take up a thickness of 1 1-2 inch, it will then require 25 bags for each charge pressed. Add to these, five others for extra occasions, it will then form what is called a *set* (un jeu de sacs.) If the press is kept at work day and night, three sets will be required; but if only in the day, two sets will be sufficient. They ought to be changed every 12 hours. In some manufactories they use but one set, even if working day and night, but this is by no means desirable. Reckoning five months as the average length of the working season, one may fairly calculate on wearing up a set of bags in each season. The bags ought to be carefully washed in hot water in every twelve hours, in order to keep them as free from impurities as possible.

Hurdles.

The hurdles are made of osier, either peeled or unpeeled. They support the pile of bags under the press, and ought to be very strong and well put together, though not cumbrous. The dimensions will depend on those of the face of the press, at all events, they ought not to be larger. It is needless to describe the construction of these wicker hurdles, further than to say that it resembles that of common hampers in its texture. The number of the hurdles must correspond with that of the bags, *plus* one. It will be advisable to have several sets of them, that they may be renewed every twelve hours. The same care is necessary in washing them frequently, as in the case of the bags; this is done in a flat cistern, of which mention will be made by-and-by, and which also serves to arrange the bags in. For this purpose the cistern is half filled with cold water, into which a certain quantity of unslacked lime is thrown.—Each hurdle is then carefully passed through the liquor, afterwards well rubbed with a brush and then washed in clean water.

Cistern in which the Bags are prepared.

The cistern should be large enough to contain the juice which is separated during the above operation, it ought to be a few inches wider than the hurdles, and a foot or so longer than double the length of the same. Thus supposing the hurdles are 2 feet wide, by 2 1-2 feet long, the cistern should be of the following dimensions:

Breadth	2 1-2 feet.
Length	6 1-2 "
Depth	1 "

There should be a cock in one corner of the cistern. This vessel ought to be of stout wood, lined with copper. Its situation in the building is between the rasp and the press; and one of its ends ought to be as near as possible to the cistern for receiving the pulp from the rasp.

For the convenience of working, it ought to be raised a few inches above the level of the floor. It should be surrounded by four stout moveable rails to hang the bags on, when they are arranged.

It is in this cistern that the hurdles are recommended to be washed with the cold lime water. It is needless to say, that after such washing, the dirty water should always be let off, and clean admitted. Cleanliness is indispensable in every stage.

Cistern for the Juice, Pipes, Pumps, &c.

This cistern serves to receive the juice as it comes from the press, and from thence it is transferred immediately to the clarifying copper. It should be provided with suitable pipes, leading from the press into it, and with a pump to throw up its contents into the clarifying copper. This cistern, therefore, should be placed lower than the press; and, like the former, should be of stout wood, lined with copper.—The bottom should be slightly inclined to enable the juice to draw to one side, at the lowest part of which is a hollow, in which the end of the pump is inserted, that it may be entirely emptied.

The dimensions depend on the mode of working. If only one defecation take place in 12 hours, the cistern need not be above half the cubical size of the defecating copper. But if the plan be to work on small charges, so as to make two or three defecations in twelve hours, then the cistern ought to be of equal capacity with the copper. The form is of no importance whatever. The pipes should be of copper, and the whole carefully and frequently washed with lime water, and afterwards well rinsed.

3. *Operation of the Press.*

The cistern in which the bags are prepared, being placed as above described, one of its ends being a foot or more from the pulp cistern, the four rails are fixed to support the hurdles. On the top of these rails, as a frame, a hurdle is laid, and on the hurdle a bag charged with pulp; the bag and its contents are then spread evenly on the hurdle by two laborers, so as when finished to occupy a comparatively small space in point of thickness. This done, another hur-

dle is placed upon the bag, then a bag, and so on, in alternate layers of bags and hurdles, till the pile amounts to ten or twelve bags; it is moved to the other end of the cistern, where it remains till a third laborer carries it to the press; another pile is then formed of equal height to the one removed, which, in its turn, is moved on, and replaced by another. The average charge of the press is thirty bags. It is unnecessary to explain further the details of this operation; experience would very soon dictate the best system of working; we shall, therefore, go on to say, that when done, the press is discharged, and the three laborers proceed to empty the bags in a place appointed to receive the pressed pulp; the bags and hurdles are then separated, and got ready for another charge. Supposing that only one set of bags and hurdles are in use, it is easy to work off ten or twelve charges of a hydraulic press in twelve hours. Thus from charges amounting to 400 kilogrammes (883 lbs.) of pulp, one should press in a day 4 tons to 4 3-4 tons of roots, which, at seventy per cent. of juice, would yield from 644 to 764 gallons of juice. This juice is received in the cistern before mentioned.

During the preparation of the bags, there collects in the cistern, in which this work is performed, a certain quantity of juice, which would be hurtful if suffered to remain there long. This therefore, ought to be removed at every charge, or, at most, every two charges of the press, which is easily done by the plug, or cock, at the bottom of the cistern, and which communicates by pipes with the juice cistern,

CHAP. V.

Defecation of the Juice.

The juice of the beet, as it first issues from the press, contains all the soluble matter of the root, an analysis of it giving (as will appear hereafter,) a mixture of sugar, water, and divers foreign substances. If the juice contained nothing more than sugar in solution with water, it would be easy enough to separate them by the simple process of evaporation, the water goes off in steam, and leaves the sugar behind. What then hinders the extraction of sugar from beet-root juice by the same simple means? The answer is obvious. Because of the foreign matter which the juice brings with it, and which combined or mixed with the sugar, render the evaporation of the water difficult, and its crystallization extremely troublesome, if not impossible. The attention of the manufacturer must, therefore, be directed to the separation of these particles, and this is accomplished by the process known generally by the name of *defecation*. This is entirely a chemical operation. It consists in finding such agents as will precipitate, in a solid form, all the substances foreign to the sugar, whether in combination with it, or solidified without such combination, It is necessary also that these agents shall not be of a quality to alter the sugar when in contact with them, and that they may be afterwards carried away with the residuum. Whatever be the nature of the agent employed, it ought to be simple, and open to the comprehension of a common workman, and moreover, that it be not of too costly a description.

The only agents used in defecating are, sulphuric acid and lime. Great care is requisite in using them.

It has been elsewhere stated, that the re-action of defecating agents ought to be assisted by heat; and it is on this account that coppers, or boilers, are resorted to. The following section describes this method of defecation.

§. 1. *Boilers for Defecation.*

These vessels ought to be circular, and should be formed of copper. Their dimensions vary with the magnitude of the works, from 228 gallons to 570 gallons; though some prefer a number of a smaller size, say 40 to 50 gallons. It is agreed on all hands, that the interval between the raspage and the formation of syrup ought to be as short as possible, in order to produce the most profitable results. In fact, the friction occasioned by rasping is necessarily accompanied by a certain portion of heat, which tends to increase the action of the press. Now it is well known, how detrimental the action of heat is to all organic substances, dissolved or suspended in large watery masses. This action is easily discernible between the root and the pulp, and then again between this latter and the expressed juice. The change goes on increasing in proportion to the interval between the rasping and the defecation. The decomposition has often been such as entirely to prevent the formation and separation of the sugar. The copper then should be filled in the shortest possible space of time; but if large masses are acted upon, and, consequently, large coppers made use of, it is essential, in order to charge them rapidly, that a number of rasps and presses should be employed, proportioned to the required despatch of the operation. Thus, to charge a boiler of between 500 and 600 gallons in two hours, which would be a reasonable time enough, it would be necessary to rasp and press during this interval, about four tons of roots. Supposing that a rasp is used which in twelve hours will finish eight tons of roots; supposing also a hydraulic press which is capable of working of 880 lbs. of pulp in one hour, it will require, in order to obtain 570 gallons of juice in 2 hours three rasping mills and five presses; but if only

this quantity is required to be obtained in 12 hours, and, consequently, that there is but one defecating boiler, the three rasps and five presses will only work two hours a day, and remain idle the rest of the time. This is bad. On the other hand, when it is attempted to fill a boiler of 570 gallons by means of only one rasp and one press, the inconvenience will occur of delaying the juice before the process of defecation can be begun. Both these evils ought to be avoided.

A variety of reasons are given by M. Dubrunfaut, for preferring boilers of a medium size to those of large dimensions. He considers those of about 90 or 100 gallons as much more convenient than the larger sizes before enumerated. Of course two or more would be required according to the magnitude of the work. Two boilers of these dimensions would readily do the work of one of 570 gallons, and the first cost of them would not be more. As soon as one is brought to the boiling point, the fire can be removed to the grate of the other; in short, whilst the process of defecating is going on in the one, the other may be left to precipitate its extraneous substances.

A defecating boiler, intended to act by precipitation, ought to be equal in height to its diameter. A fifth of the size absolutely required to contain the juice should be allowed for boiling space: thus, a boiler which would hold 100 gallons, ought to be large enough to *boil* one hundred and twenty gallons in. The boiler ought to be mounted to such a height as to allow of the liquor running off clear, by an easy slope into the evaporating boiler. The temperature should never exceed 80° of Reaumur 212° of Fahrenheit.) Thus, admitting that the boiler is 36 inches in height, and the same in diameter, it should have a grate of about the following proportions:—

Length . . . . 23 inches.
Breadth . . . . 15 "

This grate is of cast iron and composed of 10 bars. The bottom of the boiler is placed about 15 inches above the grate, round which is a flue to enable the flame to circulate to the height of the charge. This flue, at its opening into the chimney may form, in section, a parallelogram of 140 square inches. A boiler on this construction presents to the fire a surface of 413 square feet, and will boil its contents in about three quarters of an hour, with the consumption of 24 lbs. of coal. If wood is burned there must be double the quantity allowed.

§. 2. *Appendages to a Defecating Boiler.*

They are the following:—

1. A thermometer and an areometer.
2. Scales and weights to weigh the lime.
3. A bin for lime, and wooden pails or buckets.
4. A measure either of lead or copper, for sulphuric acid.
5. A wooden instrument to stir up the liquor in the boiler.
6. A plated spoon, to observe the juice with, and an experiment saucer.
7. A skimmer.
8. A filter and funnel.

Areometer and Thermometer.

Beaume's areometer is generally allowed to be the best; it should be provided with a tin case, having a wooden handle. The liquor about to be weighed is drawn up in this tin case which is held by the handle. It is important that the juice should be examined always at the same temperature. It should be taken as it comes from the press, and plunged, by means of the tin case, in water from a well or pump, so as to reduce it to a temperature of 10° of Reaumur (55° of Fahrenheit.) Then insert the areometer; and if all subsequent trials are made with the same precaution, the comparative results will not fail to be correct. In this state the juice varies from 5° to 10° (areometriques) of Beaume. It weighed when boiling, a difference will be found of 4° more or less, because then, the heat expanding the liquid, diminishes the specific gravity of it.

The areometer will also be found useful in the evaporation of the juice, to estimate the precise time favorable to clarification. Being of glass and consequently very liable to be broken in the hands of common workmen, it will be necessary to have a number of them at hand.

The thermometer is used in defecation to judge of the state of the temperature, and thence to ascertain the proper time for adding the clarifying agents. The most convenient place to hang it is near the boiler, and it ought to be immersed in the liquor during nearly all the time of the clarification.

Scales and Weights to weigh the Lime.

These, it is unnecessary to say more of, than they should be capable of weighing from 5 lbs. to 50 lbs.

Bin to slake Lime in, and Buckets for the liquor.

The lime employed for the defecation of beet root juice is generally unslacked, weighed in that state, then slacked with water, and afterwards, by adding more water, reduced to the consistency of cream. For this operation a bin, or cistern, of a particular form is required: it is, for the most part, circular with a cover.

M. Dubrunfaut, however is of opinion that lime should not be weighed till after it is slacked, as yielding more certain and uniform results; in which case, a large quantity might be

slacked beforehand. It is sifted pretty fine, to separate all the coarse and unburnt lumps, which, in the usual method of applying the lime, are reckoned as so many active agents, whereas, they are of no use at all in the clarifying process; and hence many errors in the general results.

A Lead or Copper vessel for the Sulphuric Acid.

The sulphuric acid is usually diluted with five or six parts of water before using. This is performed in a wooden bucket, the hoops of which are of copper, instead of iron.

Instrument for stirring the Liquor in the Copper.

This should be a round stick or pole, twice as long as the copper is deep. At one end is a round piece of wood about a foot in diameter, pierced with holes.

A plated Spoon in which to examine the Juice, and a Saucer.

The spoon should be kept bright, that the workman may judge more readily when the clarification is complete

The saucer should be very white. The use of it is to receive the small drops of syrup of violets and *tournesol*, to ascertain, by touching them with the liquid under clarification, the excess of alkali and acid.

Large Skimmer.

This ought to be at least eight inches in diameter, and to be fixed at the end of a long handle. It is not always considered necessary to remove the scum from the boiling liquor, and especially when the precipitating method is resorted to, as it forms a sort of cover or guard to the liquor against too sudden refrigeration by the action of the air.

Filter for Skimmings.

An enclosed or covered filter is recommended in preference to the one in common use, it being important, in order to get as much liquor from the skimmings as possible, that they should not be suffered to cool too fast. The construction should be the same as that hereafter described for the juice, only that the one may be made of coarse cloth or canvass, and the other of fine linen. The filter should be provided with a receiver adequate to the amount of juice from one charge.

§. *Of the different modes of defecation.*

This is one of the most difficult operations connected with the manufacture of beet-root sugar. The results are perpetually changing as the nature of the root changes during the progress of the work. We proceed to describe the simplest and most economical of the means employed, viz., lime alone, or sulphuric acid and lime together.

The first method of defecation—that of the Colonies.

After detailing the origin and progress of defecation in France, the author proceeds to show that lime alone, if not the best means, is at least capable, in good hands, of producing very important results, and instances the manufacture of M. Houdart, near Douay, as one of the best and most successful on this principle. Suppose 114 gallons of juice are to be clarified.—The boiler being charged, and the fire burning, the thermometer is placed in it, and should be kept there till it amounts to 60° or 65° (167° or 178° of Fahrenheit.) During this interval eighty-eight pounds of lime slacked and sifted, are weighed out; four or five bags are then similarly prepared, each bag containing 7 pounds of lime. This done, the 88 lbs. of lime are put into a wooden vessel, where they are mixed with clear water, till they become like milk.—This mixture is poured into the boiler when the temperature is above 60° or 65° (Reaumur.) The whole is then briskly stirred for some minutes, in order to incorporate the lime well with the liquor. Before the lime is added, a thick scum will show itself on the surface. Lime often destroys this scum, or at any rate, it is suspended in the liquid by agitating it when the lime is added. When thoroughly mixed, some minutes should elapse before the full effect will be produced; then, with a bright spoon, take a little of the liquor, and examine it carefully; if the quantity of lime be sufficient, the juice will exhibit a number of clots, or particles, in suspension, which will soon settle to the bottom of the spoon, leaving the upper part of the liquid perfectly clear and transparent and more or less of an amber color. If, instead of this, the lumps are very much divided, and only swim in the liquor without settling to the bottom, even for several seconds and if the juice remains of a thick milky color, it is a proof that more lime is wanted.

One of the little parcels of 7 lbs. is then mixed with water, poured into the boiler and well stirred as before. The juice is then again examined with the spoon, and if the symptoms are still not so favorable as they might be, another 7 lbs. are added, and so on 7 lbs. each time till the defecation of the whole is complete.

88 lbs. of lime to 114 gallons of juice may always be used with safety. It is, in fact, the minimum dose that ought to be applied. The quantity varies with the quality of the beet root and the period of the season when applied.—Thus, at the beginning of the season, when the roots are rich and full of sugar, the greater will be the proportion of lime necessary. The object of the lime being to precipitate certain substances which impede the formation of su-

gar, it should, of course, be added in quantities adequate to the amount of these substances; for, experience seems to show, that as the quantity of sugar increases; so will also these extraneous matters. Thus, a firm, solid beet root requires more than a watery root, and *vice versa*.

On the whole, the safest way is to *begin* with *little* enough of lime, for it is very easy to add more from time to time, as above directed. But it is not to be inferred from hence, that, *on the whole*, a small quantity is preferable to a larger. So far as is this from being the case, that it is considered better to use too much than too little; for though an excess of this alkali is prejudicial to the sugar, it is always less so than an insufficient quantity. The observations of the workman cannot be too frequently taken during the process of defecating. A clear liquor and a perfect precipitation are the main objects to be accomplished. If these are not obtained, or imperfectly so, the results will be sure to suffer.

It has been imagined by M. Bardel, that the red beet requires more lime than the white; but M. Dubrunfaut considers this opinion as not altogether correct, and is rather disposed to refer the apparent difference to the season, which might that year produce a red beet of a firmer and less watery description than the yellow.

The beet juice, when it first comes from the press, is of a milky hue. and yet dingy. When heated the scum and froth rise; but as soon as the lime is added, the black, dirty color disappears by degrees, and abundance of flakes are seen in the liquor. These flakes are usually of a yellowish grey color; when the proportion of lime is sufficient, they separate from the liquid and sink to the bottom. When arrived at this stage of the defecation, the fire must be withdrawn, and the boiler left to itself for an hour or two that the whole may settle properly. The cock placed just above the bottom of the boiler should be opened to draw off the liquor clear. The juice is then conveyed to the evaporating pans—of which more hereafter. Care should be taken to watch the liquor as it runs off, lest any part should become thick and turbid, especially towards the end; so soon as this is perceived, the cock should be closed and the lower one opened, that the residuum may pass through the filter. When this is all drawn off, the boiler is ready for a fresh charge.

The defecation by lime is denominated *the system of the colonies*, because there the process was made trial of, and long before beet-root sugar was even thought of. But it ought to be explained, that, in the present day, it is not used to such advantage in the colonies as in France. There, in fact, the management is of t to a slave, who, not unfrequently applies the lime at random; and, of course, the results are, and must be, very unequal.

It has been shown that it is better to use too much than too little lime in defecation. Both are stated to be evils, and yet of two evils the former is the least. After having operated on the extraneous matter in the sugar, it then begins to act on the sugar itself.

Defecation by lime alone, then, has this grand inconvenience, that a part of the sugar is destroyed to save the other. In this process, in fact, when the syrup is run into moulds, it produces an abundant crystallization; and the molasses, which come from it more rapidly than by any other mehtod, have a very disagreeable taste and smell: they have but little sweetness, and if by any known process a second crystallization be attempted, not an atom of sugar can be obtained from them. Nay more, the sugar partakes of the bad taste and smell of the molasses, and is thereby rendered unsaleable in the market. Even after refining, these objections are still more or less perceptible. M. Dubrunfaut states that he has experienced this himself, as a refiner. The sugar produced by the lime was always very fair to the eye, the grain large, strong, and open; but it had a peculiar smell, and left a disagreeable flavor in the mouth.

It is a pity that the defecation by lime presents these inconveniences, for it is the mode of all others the simplest, and best adapted to common farm establishments. It is, indeed, on this account that many manufacturers who have adopted it continues still to use it notwithstanding the inferiority it presents, both as to quality and quantity of its results as compared with those of other and more complicated methods. It cannot be recommended even managed in the best known manner. Its simplicity does not overcome its imperfections, and the author above quoted greatly prefers either of the following methods.

Notwithstanding the decided opinion here expressed by M. Dubrunfaut against the employment of lime alone as a defecating agent. it has been ascertained, by subsequent experience, that it is capable, under proper management of producing very favorable results, both as to quality and quantity.

To make fire and water proof Cement.—To half a pint of vinegar add the same quantity of milk; separate the curd, and mix the whey with the white of five eggs; beat it well together, and sift into it a sufficient quantity of quick lime, to cover it to the consistency of a thick paste. Broken vessels, mended with this cement, never afterwards separate, for it resists the action both of fire and water.

SILK CULTURE.

[Continued from page 138, No. 9.]

Food for the Silk Worm.—Though the foliage of the mulberry is the natural food for the silk worm, and the only food from which they can make silk, yet there are various other plants, on the leaves of which they will feed and live.—The more common are the rose, lettuce, bramble, dandelion, hop, hemp and fig. It is also said they will feed upon the leaves of the currant. The worms may, therefore, be fed on these leaves, when the leaves of the mulberry cannot be had, for the purpose of keeping them alive until they can be procured. It is supposed there is a resinous matter in the leaves of the mulberry, which, undergoing a change in the stomach of the worm, enables it to make silk.

Silk Culturist.

Seed Cocoons.—In the selection of cocoons for seed, care should be taken that an equal number of males and females are preserved.—The sexes are distinguished by the external appearance of the cocoons. Those of the females are the largest and fullest in the middle, while those of the male are smaller, have a ring drawn tight in the middle, and have one, and sometimes both ends a little compressed. After they are selected they should be strung on separate threads, and care be taken that the needle do not penetrate too far in stringing. In about two weeks from the time of rising to spin, the moths will come out of the cocoons. This ordinarily happens in the morning, and the males and females should be kept separate an hour or two, after which they should be placed together in pairs on sheets of paper, and laid away in a dark room until the female has done laying her eggs. This will occupy several days.

It will be found convenient to have paper boxes, perforated with small air holes, in which to confine the males from the time of their coming out of the cocoons until the time of coupling them with the females. In a week or ten days after the eggs are laid upon the paper, the sheets should be folded up, packed away in a tight box and deposited in a cold dry cellar, there to remain through the winter. The number of eggs laid by each moth is from three to five hundred.*—*Silk Grower.*

*The eggs may be kept from hatching in an ice-house without endangering their vitality.

To secure the worms against black ants.—The black ants may be prevented from committing depredations on the silk worms, by placing the stands on which the worms are reared a little distance from the walls of the cocoonery, and have them attached to the floor below. Then six inches from the bottom of the posts of the worm stands, chalk a ring around each post, (this should be done before the worms are hatched) one and a half inches wide. When the ants ascend to this ring they fall back, as the white chalk crumbles under their feet.—*Silk Cult.*

[The worms should be carefully guarded against tobacco smoke during the whole process of feeding.]

Reeling—See Ten. Farmer, No. 7, Vol. 2. page 101.

To raise the Mulberry Hedge.—Mr. De Labigaire directs as follows. "Round the field to be enclosed, dig up a ditch three feet wide, and two feet deep; the longest roots of the young parts being cut off near the hairy fibres, must be planted about eighteen inches deep, at the distance of three or four inches [twelve we think near enough,] from each other. After the ditch is filled up, every shoot must be cut at the height of two or three inches above the ground. Whether the plant is big or not, there is no matter, provided it is at least one year old. The time to plant these hedges is the beginning of April [last of April or first of May here.] The second year it is necessary to cut again the shoots about six inches above the ground, in order to give more strength to the sprouting branches, which will form a pretty strong hedge the third year, and at last grow so thick as to be impassable by cattle. It may be twisted and interwoven a great deal easier than the hawthorn. If you choose to make a strong hedge, you may plant it in double rows. For three years the young wood must be defended against cattle. No insect attacks the mulberry."

The subject of mulbery hedges is deserving of all attention from silkgrowers; and the experiment of making the home of the worm upon the hedge is worthy of experiment, at least in the milder sections of our country.—*Cultivator.*

What the Printer said.—A Printer observing two sheriffs in pursuit of a distressed author, remarked that it was a new edition of "Pursuits of Literature." *unbound* but *hot-pressed.*

Ohio.—A writer in the New York Spectator says, that of the 2,000,000 acres of land which the State of Ohio contains, nine tenths is susceptible of cultivation; that it has 190 miles of ship and steamboat navigation on its northern borders, and 436 miles of steamboat navigation on its southern boundary, and 550 miles of canal navigation, which has cost the State upwards of $5,000,000.

TO OBTAIN NEW & IMPROVED KINDS OF WHEAT.

Loudon observes that to procure new varieties of wheat, the ordinary mode is to select from the field a spike or spikes, which has the qualities sought for, such as larger grains, thinner chaff, stiffer straw, a tendency to earliness or lateness, &c.; and picking out the best grains from this ear or ears, to sow them in a suitable soil, in an open, airy part of a garden. When the produce is ripe, select the best ears, and from these the best grains, and sow these, and so on till a bushel or more is obtained, which may then be sown in a field apart from any other wheat. In this way many of the varieties of our common winter wheat have been obtained; as the hedge wheat, which was reared from the produce of a stalk found growing in a hedge in Sussex, by one Wood, about 1790. Other varieties have assumed their distinctive marks from having been long cultivated in the same soil and climate, and take local names, as the Hertfordshire red, and Essex white, &c.—*N. E. Farmer.*

HESSIAN FLY.

The Baltimore Chronicle gives a new receipt to prevent the ravages of the Hessian fly. A farmer in Washington county, Md., several years since, found it impossible to procure a sufficient number of laborers to collect his abundant harvest of wheat. Fearful of losing it, he began, against the advice of his friends, to reap it several days before it was fully ripe. The grain thus cut before the proper time was laid by and used for seed the next year. The fly laid waste the fields of his neighbors, while his was spared, and he gathered another plenteous harvest. He repeated the experiment with success, and this year his crop is abundant as usual. He supposes that the fly deposits its eggs only upon the wheat when perfectly ripe, and of course, that grain cut in an immature state escapes it.

Remember this.—Unfermented vegetable and animal matters, including green sward, green crops, and long manure, after being buried by the plough, should never be exposed to the sun and winds by cross ploughing until they have become perfectly rotten. The gaseous matters which dung gives off while undergoing fermentation, always rise, because they are lighter than atmospheric air. They enrich the soil and afford food for plants, because they have already formed a necessary part of plants.—Hence, if fermentation takes place *on* the surface, these gaseous matters are scattered and lost; if *in* the soil, the earths and moisture retain them there, and the plants feed upon them.

Cultivator.

Smoky Chimneys.—It has been clearly demonstrated by science and practical experiment, that this great drawback upon domestic comfort, is remedied by an unerring and simple process, viz: a slight but continued enlargement, commencing at the bottom of the flue, and extending to the top. This is sure to produce a draft, and it is presumed that in most instances of defective chimneys, an inattention to this simple rule, in the original construction would be found the cause of the evil.—*Niagara Democrat.*

AGRICULTURAL BOUNTY.

The Legislature of Maine, at its last session, passed an act, giving a bounty of two dollars to every cultivator of the soil who will raise 20 bushels of wheat, and six cents each for every bushel over 30. In speaking upon the subject and its results, the Boston Herald says:

"We understand, from a Maine gentleman, that the consequent excitement has been such, that there is every prospect of an immense crop. He states that from calculation, the tax to the State, from this bounty will not be far from *two hundred thousand dollars.*"

Upon which the Philadelphia Sat. Courier makes the following sensible remarks:

"We never could discover the least reason—so long as a scarcity of breadstuffs, compared with the consumption, exists—that every Legislature in every State should not do the same thing. It is certain that something should be done to induce men to grow grain. Consumers require it—the present state of things show it. Let legislators think of it and act accordingly."

We trust that our Legislature, at its next session, will bear the above in mind, and, instead of from fifty to a hundred *divorce bills*, pass a similar act; the benefits that will speedily flow from it, not only to individuals, but to the State at large, will be almost incalculable.

Franklin Farmer.

To cure a foundered horse.—A highly respectable gentleman of this county, a few days since, communicated to a friend of ours the following cure for a foundered horse. He has tried it with complete success in five different cases, some of them very severe ones, and has heard of its success in many more:

"Curry the horse with a sharp curry-comb, very briskly against the hair, from his hoofs over his whole body, and with sufficient severity to draw blood slightly in places; then jump on him, run him some distance, and he is well.

Lex. Gaz.

Choose a wife as you would a knife. Look to the *temper.*

Communications.

For the Tennessee Farmer.

REARING HOGS.

There is an inveterate antipathy in the constitution of human nature to any departure from the beaten way of old habits and hereditary usages. This is more observable, perhaps, in the agricultural than in any other class of the community. "The way my father did before me," seems, with a great many, to justify any folly and mismanagement, and to exclude, forever, all hope of, or stimulus to, enterprize and improvement. We would qualify this censure, however, with an expression of our firm belief (and we rejoice at the fact) that there is a gradual and evident improvement in the agriculture of East Tennessee. It must of necessity be so, if we would not starve. The original vigor of our soil has been wofully diminished by the exhausting crops of its early culture, and he who is not *beginning*, at least, to improve his land and use some little stratagem in the rearing of stock, may live a life of labor without profit, and die in poverty at last.

If our farmers neglect any one portion of their duty more than another, I think it is in the rearing of hogs. The practice almost universally prevails of feeding this animal (when it is fed) throughout the year, on raw Indian corn in the ear; and the fact that they cannot be profitably raised in this manner, is so generally admitted and believed, that few attempt to rear them for sale, but those who have rich bottom lands, and make large crops of corn.

Now, I have no doubt that every ordinary upland farm can be made subservient to the rearing of hogs with great profit, at little or no expense of preparation, and with a yearly improvement of the soil.

As, therefore, every one who finds fault with an existing system, should be ready to propose what he considers a better one in its place, I will suggest a general method which will embody the principles of my scheme, but which may be varied according to circumstances.

Have two or three clover fields for your hogs in the months of May and June. Sow an early crop of oats, to ripen about or before the first of July, and also a late crop to ripen about the first of September, (I intend making the experiment if a third crop cannot be had to ripen in October, or the last of September) by sowing the ground of the first crop over again after it is eaten off.) July and August your hogs will live in the grain stubble, especially if you leave some patches of your oats uncut—such, for instance, as have fallen down, or are mingled with briars or sprouts, a misfortune, alas! too common amongst us. While all this is going on, put up a cast pot or kettle of pretty good size in a little furnace (which almost every farmer can do for himself;) get a box or tub, bore auger holes in the bottom, set it on the kettle, and instead of turning your hogs into your apple orchard to get their teeth on edge, eating sour apples, steam them in this simple and cheap apparatus, and you will find that sour raw, and cooked apples are totally different articles, as food for hogs. From this period, say the middle of September to the first of May, every farmer ought to be prepared to feed his hogs principally on apples, pumpkins, potatoes, artichokes, turnips, carrots, beets or any other vegetable most easy of cultivation; all, however, boiled or steamed, and mixed, if thought advisable, with corn meal, ground buckwheat or oats, or wheat bran. Hogs may also be fatted for market with almost any of these vegetables, feeding for ten days or two weeks previous to killing, on dry corn meal or mush alone. If your vegetables should give out, then resort to your corn crib, but not till then, and then feed the grain ground and cooked, by which means you can save the one half.

Now, no one doubts the superior strength of the Indian corn to any of these esculents; but the vegetables named will undoubtedly keep hogs in healthier condition than the corn alone; and in this way may make up for their want of strength, as food for the animal system.—Besides, they are most, if not all of them, of so much easier cultivation than corn—produce so much more abundantly, and some of them, instead of exhausting the soil as the corn crop does, will, I have no doubt (as the artichoke, for instance,) annually enrich it.

I would especially recommend to the farmer to gather his apples for this purpose. Almost

every farm in the country has the necessary appendage of an apple orchard, and vast quantities of apples are every year wasted for want of care in gathering them, or put to a worse purpose even than this destruction. Make enough cider, therefore, for your own vinegar, and no more; but above all, pervert not the gifts of a kind Providence, by converting them into poison in the shape of ardent spirits, to ruin the souls and bodies of your fellow-men (a practice, I am rejoiced to say, no longer reputable in this country.) A large amount of corn may be saved by this substitute, and a fine quantity of pork or bacon brought to the market.

In conclusion, I would earnestly request my brother farmers to reflect upon this project of economy, and even to try its expediency by putting it to the infallible test of experiment.

ARATOR.

☞Below will be found a letter from a gentleman of West Tennessee, from which we are pleased to find, that the silk business is engaging the attention, not only of our farmers, but also of our literary and professional citizens in that section, as well as in E. Tennessee. Already have several of the citizens of E. Tennessee engaged in the silk business, though as yet only on a small scale. We wish all the silk growers of our State abundant success.—Nothing has yet been said in this part of the country in regard to memorializing the Legislature, but we think it highly important that something should be done to get our Legislature to hold out inducements, not only to our silk growers, but also to several branches of agriculture, which, with a little encouragement, would return a benefit to the State, far exceeding the amount necessary for their encouragement. We hope our silk growing friends will still continue to advise us of the progress they are making in this very useful branch of business.

Fayetteville, Ten. 29th Aug. 1837.

DEAR SIR: It is highly gratifying to every friend of our country to find in you and through you in your useful journal, a staunch and long-tried friend to the silk culture. I presume you are making efforts to memorialize the Legislature at the coming session. It is believed that public attention may be so directed and engaged as to result in something immediately encouraging and valuable, if our friends will but be up & doing. I have lived in Tennessee but six months; but, little sagacity only is wanting, to make me see, what we have been often told through the public prints, that no State in the Union, and no portion of N. A. possesses superior advantages for the culture of silk.—In these 6 months, while engaged in the arduous duties of my profession, I have raised

10,000 Morus Mult. and Chinese Mulberry Trees from 4 to 8 feet.

3 000 Florence Mulberry.

500 White Italian "

10,000 Chinese " just from the seed.

Have grown two crops of the white worm, fed on the leaves of my trees this season, and on reeling the silk on the improved reel, find it excellent. Next season, I hope to be one among many others in our State, engaged in this business; will supply trees, seed, reels, &c., on the lowest terms, to extend the culture. Wishing you abundant success and reward in your valuable efforts to extend all good husbandry, please consider me a subscriber to your paper, and sincerely your friend,

J. T. DAVIS, *Prin. Fay. Acad.*

COOKERY—CONTINUED.

To pickle Onions.—The small round silver button onions make a very nice pickle. Take off their top coats; have ready a stewpan, 3 parts filled with boiling water, into which put as many onions as will cover the top; as soon as they look clear, immediately take them up with a punched skimmer and lay them on a cloth three times folded, and cover them with another until you have ready as many as you wish; when they are quite dry, put them into jars, and cover them with hot Pickle, made by infusing an ounce of Horse-radish, same of Allspice, and same of Black Pepper, and same of Salt, in a quart of best vinegar, in a stone jar, when cold, bung them up tight.

Beware of a superficial, slight, or confused view of things.

FARMERS LOOK HERE.

A sensible writer in the Bangor Mechanic and Farmer, in compiling and examining the subject of the culture of Wheat says, that Wheat countries by continued cultivation becomes almost incapable of yielding wheat. It has been found that every soil is defective unless there is a mixture of three kinds of earth, to wit: clay, sand and lime; and that lime in some of its combinations exists in Wheat both in the kernal and straw. In some soils fertile in other respects, lime may have no existence, or found in minute portions and be soon exhausted. If lime be a necessary constituent of Wheat, and is not in the soil where we attempt to raise it, it must be supplied by art, or Wheat will not grow—or if native lime exists in the soil in very small quantities, the land may bear Wheat until the lime is exhausted, and then become incapable of producing that plant until a fresh supply of lime, marl, or pulverized bones, or some other calcareous substance is supplied." With a full knowledge of all those circumstances, it can be easily foreseen when an otherwise tolerably rich soil becomes worn out, and at least incapable of producing more than half a crop of Wheat. It is a subject we hope the farmers will take under deep consideration.—*Lancaster Express.*

Great feat in Mowing against time.—On Saturday last, a sweltring hot day, Benjamin Asbury, of New Jersey, repaired to League Pond, the property of Charles Wharton, Esq. of this city, for the purpose of testing his strength and skill by mowing three acres of grass! A large party of gentlemen landed on the island to witness this extraordinary feat—extraordinary indeed, when we remember that the mowing of one acre is an average day's work. The time was fixed between sunrise and sundown; and Mr. Asbury accomplished his task within three minutes of the limit, apparently without being much fatigued—thus proving himself to be one of a

"Right bold peasantry, his country's pride."

The party afterwards partook of an excellent repast at the house on the Island. During the festivity, a bumper to the health of the knight of the scythe was not forgotten, neither did the company omit, in their "flowcups," to toast Mr. Wharton, for his gentlemanly and hospitable conduct on the occasion. A handsome purse was made up for the mower.—*Pennsylvania Inquirer.*

Agriculture.—"The happiness of man," says Chancellor Livingston in a letter to Arthur Young, "depends so much upon the advancement of agriculture, that every new discovery, every improvement by which the fruits of the earth are increased, should be thrown into the common stock; and the man who has been so fortunate as to make them, should thank God that he has been enabled, in some sort, to repay to society the debt that he owes them for the benefits he has himself received from the discoveries of others, to the great mass of which his own, however important, will be insignificant."

New Music.—We publish the following little story for the benefit of all females who pretend to high accomplishments and possess a great deal of false pride. It is from the Haverhill Gazette:

"A young lady of high accomplishments, (and no pride) in absence of the servant, stepped to the door on the ringing of the bell, which announced a visit from one of her admirers. On entering, the beau, glancing at the harp and piano, which stood in the apartment, exclaimed, 'I *thought* I heard music—on which instrument were you performing, Miss?' 'On the gridiron, sir, with the accompaniment of the frying pan!' replied she! 'my mother is without help, and she says that I must learn to *finger* these instruments sooner or later, and I have this day commenced taking a course of lessons.'"

Wool.—The Rutland Herald says that this staple of Vermont is now ready for market, and estimates the aggregate crop in that State at over 3,000,000 pounds, which at last year's prices (about 60 cents) would amount to near two millions of dollars.

An old English paper contains thirteen objections by a young lady for declining a match—the first twelve were the suitor's twelve children, and the thirteenth the suitor himself.

Raising Potatoes.—An agricultural paper says that if the eyes of potatoes are soaked in milk for three days before planting, they will produce finer and more mealy potatoes than they can grow in any other way, and more of them. Three years ago, a farmer of Pennsylvania, grew 620 bushels off of one acre of land, by this simple process.

To PERFUME LINEN.—Rose leaves dried in the shade, cloves beat to a powder, and mace scraped; mix them together, and put the composition into little bags.—*N. Y. F.*

In Texas a Court of Honor has been organized, to suppress duelling. One affair has already been prevented through its agency.

Poetry.

[From the Farmers' Cabinet.]

FARMERS' SONG FOR 1837.

While the commercial world doth rock,
And feel the earthquake's power—
We only hear the distant shock,
Which deepens every hour.

While Merchants' notes suspended lie,
Nor banks their specie yield—
The plough still merrily we ply,
And still enrich the field.

While anxious brows and faces pale,
Like spectres, fill the town—
We speed our toils with looks so hale,
'Twould ill befit the frown.

While parsons, squires, and doctors all
Must whistle for their fees—
Earth's credit has no rise and fall,
The farmer rests at ease.

Not ease like that which sluggards love,
As sweat of brow will show;
And rest of mind! 'tis this we prove,
The sweets of this we know.

What if we sell not as before,
Our lands still yield their crop;
We shall not starve! and what's still more,
May cheer the sufferer's hope!

With "food and raiment" we're content,
And if God smiles, they're ours—
For both through fields and flocks are sent,
with honey from the flowers.

So thanks to him who gave our lands,
And makes us differ now—
From those who gaze on empty hands,
Or 'neath misfortune bow.

CLEMENTINA.

From the Yankee Farmer.

EASY METHOD OF HIVING BEES.

Mr. Moses Winslow, of Westbrook, has described to us his method of hiving bees which he has practiced with complete success for fifteen years, and has never known his bees to pitch on any other place than that prepared for them.

Drive down two stakes, about four feet apart, fifteen feet in front of the bee house; tie a poll across these stakes about three feet from the ground; then take a board about one foot wide and twenty feet long and lay one end on the ground at the front of the bee house and lay the other part on the poll between the stakes. Put up this board in the beginning, and let it remain till the close of the swarming season. The bees will pitch on the under part of this board, and then that end which lays on the ground should be raised to a level with the other and put on a barrel, box, or something else. Then turn the board upside down and place the hive over the bees and fasten it with props to prevent the wind blowing it down. By having a board not more than a foot wide, the hive will extend out over the board and be less likely to kill the bees when it is placed over them, and it will leave room for the bees that may be outside the hive to pass into it. Mr. Winslow observes that he has sometimes found three swarms at once pitched on one board in different places. When he first puts up the board he usually rubs on it some honey or salt water, herbs or the like, but this may not be necessary.

We think that this method of hiving bees is a great improvement, as it saves time and trouble, and danger of being stung, and injury of trees frequently occasioned by cutting them in hiving bees. Another great advantage, the timorous can be saved the misery of being frightened half to death lest they should be stung while on a ladder or tree, without the privilege of running from the enemy.

SAW DUST FOR PACKING PLANTS.

I have noticed in the agricultural papers, some accounts of the loss of a large number of Morus Multicaulis imported from France during the past spring, occasioned by neglect or inefficiency in packing. I presume the material commonly used for preserving vitality of plants is moss. The kind denominated Sphagnum is the best for that purpose, as it retains moisture for a length of time and is not liable to fermentation.

The moss however, besides that it is not always readily accessible, is, I believe, inferior to saw dust in both the qualities adverted to.—When mixed with earth in equal proportions, and with a proper allowance of water, it will be many months before it can become dry, when securely closed in a box. By the way, boxes should be used in preference to mats—in all cases at least in which plants are impatient of removal; or when they are to be transmitted to a considerable distance.

Some years ago I received a box of plants from the south, which were put up in the fall and sent to Charleston to await the sailing of a packet. It lay there for months, and did not reach me until quite late in the spring; but on opening it, I found the contents in a fine growing condition.

About the first of this year I put up two boxes in the same manner—one to be sent to Boston, the other, to Columbus in Ohio. On the 23d of May, the former was opened, and the plants were in a state of perfect preservation; having lain undisturbed for nearly five months. In the other case, though the box was small, and almost as late in reaching its destination, yet the plants were in a condition equally good.

I have reason to believe that many of the losses sustained in the removal of trees and plants to a distance,—and they are not few—are to be ascribed to the imperfect manner in which the packages are made. An accidental delay, or

unexpected change of weather may materially retard the operation of planting; and if such occurrences are not guarded against by the care of the nurseryman, disappointment must frequently be the lot of customers.

From the Genese Farmer.

FROST-BITTEN-CORN.

1. If corn, while in a state of imperfect maturity, be bitten and injured by frost, will any thing be gained by cutting it up? 2. Is it profitable, in ordinary cases, to cut up corn at all, or to cut up the stocks while the ears are attached to them? In answer to the first question we shall now offer some remarks, and to the second we will respond at another time.

At the time of the great frost in September we happened to have a small field of corn which was badly injured by that frost, and what to do with it was to us a perplexing question. Having however a slight impression that something might be gained by cutting it up immediately, we went at it, and cut and put up with our own hands, as much perhaps as grew on the fourth of an acre. But finding that the work was toilsome, and having some misgivings as to what might be the consequences of it, we concluded to discontinue our labors, and abandon the crop to its fortune, whatever it might be.

The results of this experiment were such as fully to sustain the opinions entertained by the old farmer of Waterloo, as reported by the editor of the Farmer, who was present and heard the conversation. See Monthly Farmer, Vol. 1. page 165. See also Genesee Farmer, vol. 6. The conversation turned on the question, what should be done with corn that had been stricken with the frost? The old farmer "said that corn would ripen when deprived of its tops by the knife, and why should it not ripen when deprived of its leaves by the frost? But the leaves were not all killed, and the juices were fresh in the stalks. He thought the best management was, to let it alone." We are satisfied that the old farmer gave wise counsel—that his reasoning was logical, and his opinions correct. On subsequently examining the results of our experiment, we were not able to discover that the corn which had been cut up, had, in any respect, the advantage of that which had not been cut. The difference in quality was not indeed very striking, yet there was a difference, and it was decidedly in favor of the uncut corn.

In relation to this experiment we submit the following remarks. 1. Several of the stocks, although put up as well as we knew how to do it, got down and suffered by exposure to the weather. In such cases the corn was badly damaged. 2. No part of the corn that had been cut up, came in so well as that which had not been cut, while some of it was badly injured by exposure to the weather. 3. If any advantages were gained by cutting, they were to be found only in the greater value of the stalks for the use of fodder. Were these sufficient to balance the expense of cutting and putting up, together with considerable loss in damage to the crop? This we doubt. We think, as did the old farmer of Waterloo, that when un-ripe corn is stricken with frost, the best way to manage it is, to let it alone.

DAN BRADLEY.

Marcellus Feb. 1837.

A certain Editor says—"Lazy rich girls, make rich men poor, and industrious poor girls make poor men rich. He does not mean by flattery to sacrifice truth.

Relief for Cramp in the Stomach.—Warm water sweetened with molasses or coarse brown sugar, taken freely, will often remove cramp in the stomach when opium and other powerful medicines have failed.—*Yankee Farmer.*

Read Ladies!—A discourse recently befreo the members of the American Institute, states, that there are more silk annually consumed in the United States than all the wheat, Indian corn, rye, oats, flaxseed, biscuit, potatoes and hops which are exported will pay for by two millions of dollars? The annual consumption of silks amount to the enormous sum of seven millions, nine hundred and eighty three thousand eight hundred and eighteen dollars. Here is a noble field for the exertions of our modern abstinence societies.

ADDITIONAL AGENTS.—*Col. Hiram Heartsill, Louisville, East Tennessee.; Mr. Matthew Lyon, Nashville, W. Ten.*

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